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ABSTRACT

The relationship of indebtedness and career plans at various points of the career development of new physicians was investigated. After initially examining the career plans of graduating medical students, attention was directed to resident physicians who had made some but not all decisions about the future, as well as those who had completed training and had begun practicing medicine. Based on the 1979 and 1983 Surveys of Resident Physicians, it was found that an average level of debt of new physicians was around $13,300 in 1979 and over $18,200 by 1983. Those with relatively high debt did not appear to choose more remunerative specialties or practice locations than those with lower debt. In relation to specialty, the highest average debt was incurred by those practicing in psychiatry, obstetrics/gynecology, general/family practice, or anesthesiology. Resident physicians planning to go into research and the armed forces had the lowest level of indebtedness. Other results suggest that physicians in solo practice had higher mean debt than those in other practice modalities. Those planning to practice in urban areas had virtually the same average level of indebtedness as those planning to practice in rural areas. Statistical survey results are included. (SW)

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REPORT OF THE BOARD OF TRUSTEES

Report: E
(I-83)

Subject: Educational Indebtedness and the Career Choices of New Physicians

Presented by: John J. Coury, Jr., M.D., Chairman

Referred to: Reference Committee C
(Edgar T. Berry, M.D., Chairman)

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At its 1982 Annual Meeting, the House of Delegates adopted Report U of the Board of Trustees, which summarized the most recent information on the effects of indebtedness on medical students and resident physicians. Report U also outlined a plan for the AMA to collect and analyze additional information. This report was adopted in lieu of Resolution 82 (I-81) introduced by the Medical Student Section, which called for the development of a "research protocol that will collect information . . . on characteristics of students . . . and assess the relative importance of various factors (including indebtedness, income potential, and family background) in determining the specialty and location choices of young physicians."

In response to Report U, the AMA developed a three-part research program to investigate the effect of high and rising educational costs on medical students and resident physicians. The first part of this program was completed with Report P (A-83) of the Board of Trustees. This report examined data on medical students' indebtedness collected by the Association of American Medical Colleges. The research program has two other phases:

- an examination of the actual career choices of physicians originally interviewed in the 1979 Survey of Resident Physicians; and

- the analysis of data on indebtedness, graduate medical training, and career plans collected through a new survey of resident physicians.

This report presents initial results from each of these phases of the AMA research program.

EDUCATIONAL INDEBTEDNESS OF NEW PHYSICIANS

Many individuals and organizations have voiced concerns about the potential effect of indebtedness on the career decisions of new physicians. High debt loads, it is argued, may force physicians-in-training

Past House Actions: A-83:56-60; A-82:57-59; I-81:242

to alter their career plans so that fewer will choose careers in research or general practice and more will opt for higher paying specialties (e.g., surgery, radiology, anesthesiology) and will practice in metropolitan areas. Both the 1979 and 1983 Surveys of Resident Physicians provide data that can be used to examine the relationship between debt and career choices. It is particularly useful to examine both the 1979 and 1983 surveys, since increasing debt loads may have altered patterns of behavior over time.

The following conclusions have been reached from an initial analysis of the 1979 and 1983 Surveys of Resident Physicians:

- The average level of medical educational debt of new physicians is quite high and has been increasing (average debt of resident physicians in 1979 was around $13,300 and has increased to over $18,200 by 1983).

- Though variations in mean level of debt do exist for certain categories, the variations are not large and may not explain differences in new physicians' career decisions.

- Those with relatively high debt do not appear to choose more remunerative specialties or practice locations with greater frequency than those with lower debt.

These findings are consistent with those presented in Board of Trustees Report P (A-83), and with the conclusions reached by articles published in the professional literature (e.g., French [1981]; Korcok [1983]). The discussion that follows describes the surveys and examines the specific results that led to these conclusions.

1979 Survey of Resident Physicians

In 1979, the AMA conducted a survey of resident physicians. Questionnaires were sent to a randomly selected sample of approximately 10,000 residents, of whom 35 percent responded. Approximately 3,000 of the respondents were actively practicing medicine in the spring of 1983. Information on current specialty, practice location, and practice modality on these individuals was obtained from the AMA Physician Masterfile. Tables 1 and 2 present basic tabulations of indebtedness by the career choices made by respondents to this survey.

Table 1 presents two indicators of debt load: the percent of physicians with some medical education debt and mean debt for this portion. Thus, 63.7 percent of the physicians examined incurred some debt during their medical education; for this 63.7 percent, the average debt was $13,300.

Table 1

Percent of Resident Physicians Surveyed in 1979
with Medical Education Debt and Mean Debt
by 1983 Practice Location, Modality, and Specialty

	% WITH MEDICAL EDUCATION DEBT	MEAN DEBT OF THOSE WITH SOME DEBT
TOTAL	63.7%	$13,300
Census Division*		
New England	62.2	13,700
Middle Atlantic	60.6	14,600
East North Central	64.1	11,800
West North Central	70.2	13,600
South Atlantic	62.8	13,300
East South Central	69.5	11,900
West South Central	59.5	10,800
Mountain	65.9	14,000
Pacific	66.2	14,300
Practice Location		
Urban	63.3	13,200
Rural	67.5	13,700
Practice Modality*		
Solo	63.4	16,000
Partnership	62.5	14,300
Arrangement Non-Group	68.0	12,000
Group Practice	68.8	12,100
Hospital-Based	58.8	12,300
Medical School	63.3	13,300
Specialty*		
General/Family Practice	72.1	14,500
Internal Medicine	63.7	13,200
Surgery	60.9	12,400
Pediatrics	71.3	11,400
Obstetrics/Gynecology	66.3	15,500
Radiology	55.8	13,000
Psychiatry	56.8	15,700
Anesthesiology	59.1	13,000
Other	63.6	12,000

Source: 1979 Survey of Resident Physicians and 1983 AMA Physician Masterfile.

*Means within category significantly different at .05 level.

Table 1 also reports the relationship between debt load and different career characteristics of new physicians. With respect to practice location, those in the Middle Atlantic census division have the highest average debt ($14,600) while those in the West South Central region have the lowest average debt ($10,800). However, the mean debt load of those locating in urban settings is virtually identical to that of those practicing in rural areas. Other results reported in Table 1 suggest that physicians in solo practice have higher mean debt than those in other practice modalities.

In relation to specialty, the highest average debt was incurred by those currently practicing in psychiatry, obstetrics/gynecology or general/family practice. One reason that those in these specialties have higher debt may be that they on average graduated from medical school in more recent years than those in the sample who specialized in areas such as surgery, radiology, or anesthesiology. Those who attended medical school in more recent years accumulated more debt at least in part because the cost of medical education has been increasing over time. Analysis suggests that this has a small effect on the differences noted in Table 1; for instance, only around 15 percent of the $2,100 difference in mean debt between general/family practitioners and surgeons in Table 1 results from varying graduation years. Thus, even taking this factor into account, these patterns of indebtedness seem to suggest that those with high debt do not choose more remunerative specialties.

Similar conclusions may be drawn from Table 2, which presents the distribution of physicians across career decisions for different debt levels. With this table, the choices of those with relatively high debt can be compared with those incurring little debt. For instance, 6.5 percent of those with $40,000 or more medical education debt practice in the New England area whereas 5.8 percent of those with debt of $1 to $9,999 practice in this census division. Relative to those with the lowest amount of debt, physicians with the highest level of debt:

- have a similar geographic distribution except that they more frequently locate in the Pacific region and in rural areas;

- are more often in solo practice and less often in group practice; and

- more frequently choose specialties of psychiatry and obstetrics/gynecology and less frequently choose internal medicine and pediatrics.

These variations in behavior are quite small, however. In particular, only three distributions noted in Table 2 are significantly different at the .05 level from the distribution of all physicians: the dis-

Table 2

1983 Career Decisions of Resident Physicians Surveyed in 1979
by Level of Debt

	DEBT LEVEL					ALL PHYSICIANS IN SAMPLE
	$1 - $9,999	$10,000- $19,999	$20,000- $29,999	$30,000- $39,999	$40,000+	
NUMBER OF PHYSICIANS	790	643	272	105	64	2941
(% OF SAMPLE)	(27%)	(22%)	(9%)	(4%)	(2%)	(100%)
% IN GIVEN DEBT LEVEL BY:						
Census Region						
New England	5.8%	7.8%	5.6%	8.8%	6.5%	6.7%
Middle Atlantic	13.2	15.4	14.9	15.7	14.5	15.5
East North Central	14.1	15.1	13.1	13.7	6.5	14.4
West North Central	8.4	7.2	10.1	9.8	9.7	7.6
South Atlantic	18.2	16.2	16.0	20.6	14.5	17.5
East South Central	5.8	6.1	6.0	3.0	4.8	5.2
West South Central	10.5	8.3	6.3	6.9	4.8	9.4
Mountain	6.3	6.8	5.2	7.8	9.7	6.3
Pacific	17.5	17.0	22.8	13.7	29.0	17.4
	100.0	100.0	100.0	100.0	100.0	100.0
Practice Location						
Urban	81.6	80.9	82.8	81.3	77.4	83.3
Rural	18.4	19.1	17.2	18.7	22.6	16.7
	100.0	100.0	100.0	100.0	100.0	100.0
Practice Modality						
Solo	18.1	19.3	20.2	34.1	42.0	20.5
Partnership	8.5	9.1	12.3	11.8	12.0	9.5
Arrangement Non-Group	6.6	5.3	5.9	4.7	2.0	5.2
Group	26.6	28.5	25.6	20.0	10.0	24.2
Hospital-Based	31.7	29.7	26.1	20.0	26.0	31.9
Medical School	8.5	8.1	9.9	9.4	8.0	8.5
	100.0	100.0	100.0	100.0	100.0	100.0
Specialty						
General/Family Practice	13.6	14.4	18.5	22.1	15.9	13.3
Internal Medicine	22.3	23.9	28.1	25.0	15.9	23.4
Surgery	19.6	19.5	18.5	15.4	17.4	20.3
Pediatrics	8.8	8.3	4.1	8.7	3.2	6.9
Obstetrics/Gynecology	5.7	8.6	4.4	8.7	14.3	6.6
Radiology	5.5	4.4	5.6	1.9	6.3	5.7
Psychiatry	6.4	5.8	4.4	10.6	11.1	7.1
Anesthesiology	3.2	3.8	4.8	1.0	3.2	3.8
Other	14.9	11.3	11.5	6.7	12.7	12.8
	100.0	100.0	100.0	100.0	100.0	100.0

Source: 1979 Survey of Resident Physicians and 1983 AMA Physician Masterfile.

tributions by practice modality for the debt levels of $30,000 - $39,999 and $40,000+, and the distribution by specialty for the debt level of $30,000 - $39,999. Thus, contrary to the beliefs of many, physicians with the highest level of debt do not appear to choose more remunerative practice locations, modalities, and specialties.

1983 Survey of Resident Physicians

The 1983 Survey of Resident Physicians represents another source of information for examining the effect of indebtedness on career decisions. This survey provides the most up-to-date information on educational indebtedness and career plans of physicians-in-training. The survey contains questions not only in these areas but also on choice of residency program, working conditions, and personal background. Over 13,000 resident physicians and fellows were sent questionnaires. Completed surveys were obtained from 45 percent of the sample.

Tables 3 and 4 report information on the relationship between indebtedness and career decisions from the 1983 Survey. These tables are comparable to Tables 1 and 2, respectively. It is important to recognize, however, that Tables 3 and 4 report preferences for future practice location, modality, and specialty rather than actual choices as reported in Tables 1 and 2.

Table 3 reports the percent of resident physicians and fellows who incurred medical education debt and the average debt levels for those individuals who had debt. Thus, in 1983, 65.1 percent of resident physicians and fellows had some indebtedness attributable to medical education, with a mean debt of $18,200. In comparison to 1979, then, the average amount of debt has increased by around $5,000. In real (i.e., inflation adjusted) terms, this represents about a 3 percent increase in indebtedness, suggesting that debt loads have indeed increased over time.

Other data from the 1983 Survey that are not reported in Table 3 demonstrate the rapid growth in indebtedness over time. For resident physicians in the first year of graduate medical training, the mean level of debt was $21,600. Comparable figures for those in later years of training are: $18,900 for those in the second year, $17,000 for the third year, $15,400 for the fourth year, and $12,500 for those in the fifth and subsequent years of training. Thus, average indebtedness of new physicians appears to be increasing by around $2,000 a year.

From Table 3, there appears to be little variation in the percentage with debt and mean debt levels by various categories. Those planning to practice in urban areas have virtually the same average level of indebtedness as those planning to practice in rural areas. In

Table 3

Percent of Resident Physicians
With Medical Education Debt and Mean Debt by
Practice Location, Modality, and Specialty Preferences

	% WITH MEDICAL EDUCATION DEBT	MEAN DEBT OF THOSE WITH SOME DEBT
TOTAL	65.1%	$18,200
Practice Location Preference		
Urban	65.7	18,100
Rural	67.5	18,200
Practice Modality Preference*		
Solo	61.7	18,400
Group Fee-For-Service	71.3	18,700
Prepaid Group	69.5	18,800
Hospital-Based	60.0	19,200
Medical School	60.9	17,100
Research	61.1	14,600
Armed Forces	46.8	9,800
Other	67.1	15,800
Specialty		
General/Family Practice	73.1	19,300
Internal Medicine	62.5	18,000
Surgery	63.2	17,600
Pediatrics	62.0	18,500
Obstetrics/Gynecology	73.0	16,900
Radiology	67.0	17,800
Psychiatry	57.4	19,100
Anesthesiology	72.5	19,300
Other	64.2	18,400

Source: 1983 Survey of Resident Physicians

*Means within category significantly different at .05 level.

relation to practice modality, resident physicians planning to go into research and the armed forces have the lowest mean level of indebtedness. In addition, the highest average debt load is incurred by those expecting to enter general/family practice, anesthesiology, and psychiatry.

As noted for Table 1, variations in debt level by specialty can partially be explained by the more recent graduation years of those planning to go into general/family practice. Analysis suggests that this has a minimal impact on the patterns of indebtedness shown in Table 3. Thus, the data presented in the table suggest that those planning to practice in higher paying specialties do not have more debt on average than those with different career plans.

Table 4 reports the distribution of resident physicians and fellows across career preferences for different levels of medical education debt. This table allows examination of whether those with higher debt act differently when formulating career plans than those with lower debt. It is comparable to Table 2, which reports information from the 1979 Survey. In 1983, those with relatively large debt loads ($40,000+) represent 4 percent of the total number of physicians in the sample. Though this proportion is twice as large as that obtained from the 1979 Survey, it still represents only a small portion of resident physicians.

Those with relatively high debt do not appear to have significantly different career plans than those with low debt, as demonstrated in Table 4.

- Preferences for urban or rural practices are quite similar across all levels of indebtedness.

- Slightly more resident physicians with high debt expect to go into group fee-for-service practices than those with lower debt.

- A slightly larger proportion of those with high debt plan to enter general/family practice, psychiatry, and anesthesiology.

These variations are very small, however. The patterns of indebtedness reported in Table 4 then do not suggest that those with higher debt will more frequently choose higher paying practice locations, employment modalities, or specialties.

CONCLUSIONS

The three-part research program developed by the AMA has examined the relationship of indebtedness and career plans at various points of

Table 4

Career Decisions of Resident Physicians by Level of Debt

	DEBT LEVEL					ALL PHYSICIANS IN SAMPLE
	$1 - $9,999	$10,000- $19,999	$20,000- $29,999	$30,000- $39,999	$40,000+	
NUMBER OF PHYSICIANS	870	1465	891	356	251	5884
(% OF SAMPLE)	(15%)	(25%)	(15%)	(6%)	(4%)	(100%)
Practice Location Preference						
Urban	79.2%	78.2%	76.7%	80.5%	78.7%	78.8%
Rural	20.8	21.8	23.3	19.5	21.3	21.2
	100.0	100.0	100.0	100.0	100.0	100.0
Practice Modality Preference*						
Solo	12.6	12.2	11.8	11.7	15.5	13.2
Group Fee-for-Service	45.0	57.0	53.3	59.9	54.0	49.2
Prepaid Group	2.7	2.3	4.9	3.3	2.0	2.9
Hospital-Based	8.8	9.7	13.2	10.0	11.5	11.5
Medical School	12.3	11.1	12.3	9.4	9.5	12.3
Research	.9	.8	.4	.3	.5	.7
Armed Forces	11.5	2.2	1.4	1.3	3.0	5.8
Other	6.2	4.7	2.7	4.0	4.0	4.4
	100.0	100.0	100.0	100.0	100.0	100.0
Specialty						
General/Family Practice	11.4	14.1	14.4	14.6	15.5	12.2
Internal Medicine	22.1	23.2	21.1	18.0	20.7	22.7
Surgery	23.9	21.4	21.2	23.9	19.9	22.8
Pediatrics	6.8	5.8	8.1	9.3	4.8	7.1
Obstetrics/ Gynecology	8.2	6.9	5.6	5.1	5.6	5.9
Radiology	5.1	5.2	6.3	5.6	4.4	5.3
Psychiatry	5.4	4.6	5.8	6.2	7.1	6.1
Anesthesiology	4.7	4.7	5.4	6.2	6.0	4.6
Other	12.5	14.1	12.1	11.2	15.9	13.3
	100.0	100.0	100.0	100.0	100.0	100.0

Source: 1983 Survey of Resident Physicians.

*Distributions significantly different at .05 level from distribution of all physicians, except for debt level of $40,000+.

the career development of new physicians. The career plans of graduating medical students were examined initially. Another phase dealt with resident physicians who have made some but not all decisions about their medical careers. Finally, data on those who have completed training and have begun practicing medicine were analyzed. Similar findings were obtained in each phase of the project: no clear relationship between debt and career choices appears to be present.

More detailed analysis is necessary in order to reach firm conclusions on indebtedness and career decisions. In particular, it is necessary to examine how various personal and economic characteristics of physicians interact in the formulation of career decisions in order to isolate the effect of indebtedness. This type of analysis is currently taking place. The results of this research will be disseminated in the professional literature, as appropriate.

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